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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,368	07/13/2006	Brian William Holmes	122347	5084

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EXAMINER	
CHANG, AUDREY Y	
ART UNIT	**PAPER NUMBER**
2872	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/520,368	HOLMES ET AL.	
	Examiner	Art Unit	
	Audrey Y. Chang	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 July 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Remark

- This Office Action is in response to applicant's amendment filed on July 8, 2009, which has been entered into the file.
- By this amendment, the applicant has amended claims 2, 12, and has newly added claim 16.
- Claims 1-16 remain pending in this application.

Claim Objections

1. **Claims 2-4, and 12 are objected to because of the following informalities:**

(1). The **amended** phrase "Benton H1 holographic recording" recited in claims 2 and 12 and the **amended** phrase "Benton H2 recording" recited in claim 12 are confusing since it is not clear what are these phrase are referred to? **What are considered to be "H1" and "H2"?**

The applicant is respectfully reminded that adding the phrase "Benton" does not remedy the objection to H1 and H2. If the applicant is referred to master hologram for H1 and duplicate hologram H2, then please specify the claims as is.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by the patent issued to Gayeski et al (PN. 3,749,469).

Gayeski et al teaches a method for recording a hologram wherein the method including the step of exposing an *object* (110, Figure 1), of *diffuses* light, wherein the diffused light is generated from a *pinhole array* (114), serves as the **aperture** mask, is placed at *upstream* of the object, wherein the diffused object light is directed to a *hologram recording medium*, at where interferes with a *coherent reference light beam* (102) to produce *interference pattern* that is recorded as the hologram. The hologram recording medium is placed at the image plane of the pinhole array that suggests that the sample portions of the object created by the divergent or diffused beams from the pinhole array are illuminated at different and non-overlapping portions of the hologram recording medium.

Although this reference does not teach explicitly that the hologram of the interference pattern recorded is for an optically variable security device, but it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex parte Madham, 2 USPQ2d 1647 (1987).

With regard to claim 2, the object can certain include an artwork mask, since the term "artwork" can be anything. The object can also be a three dimensional object.

With regard to claims 9 and 10, Gayeski teaches that the aperture mask includes a plurality of pinholes that by definition has non-rectilinear edge.

This reference has therefore anticipated the claims.

4. Claims 1, 5, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by the patent issued to Deml et al (PN. 3,891,975).

Deml et al teaches a method for recording hologram wherein the method comprises the step of providing object illuminating beam from source (15, **Figure 6 and 7**), through a diffuser (12) to provide a *diffused object beam* for diffusingly illuminating an object (10) and placing a slit or *mask* (11) having an

apertures downstream of the object beam, serves as the aperture mask. The diffused object beam is then directed to a recording medium (20) to interfere with a *reference beam* (134 as shown in Figure 11) wherein the interference pattern is recorded as the hologram. It is implicitly true that both the reference beam and object beam are coherent to each other to enable the interference. As shown in Figure 6, the aperture mask or the scanning slit ensures the different part of the object are image on the respective different non-overlapping parts of the recording medium

Although this reference does not teach explicitly that the hologram of the interference pattern recorded is for an optically variable security device, but it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex parte Madham, 2 USPQ2d 1647 (1987).

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With regard to claims 5-6, the aperture mask (11) has an elongated aperture as shown in Figure 6. The elongated aperture is parallel to the object which implicitly has the effect that the movement effect can be recorded in the medium.

This reference anticipated the claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2 and newly added claim 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Deml et al.

The hologram and method for recording it as taught by Deml et al as described for claim 1 above has met all the limitations of the claims.

Claim 2 has been amended to include the phrase that the object may also be a Benton H1 hologram. Deml et al teaches that the object is a recorded hologram, that is H1 holographic recording. Although this reference does not teach explicitly that the H1 hologram is a Benton H1 hologram, however since Benton H1 hologram is one type of H1 hologram known in the art, this disclosure either already included the Benton H1 hologram or is obvious design matter to one skilled in the art to make the object a Benton H1 hologram to make the record hologram with the specific type of design.

With regard to newly added claim 16, Deml et al does not teach explicitly that the object comprises a plurality of discrete objects. However since the hologram recording method is the same for either one single object or a plurality of objects, such modification is considered object matters of design choice to one skilled in the art for the benefit of recording more than one objects.

7. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Deml et al as applied to claims 1-2 above, and further in view of the patent issued to Buchkremer et al (PN. 5,973,807).

The hologram and method for recording it as taught by Deml et al as described for claim 1 above has met all the limitations of the claims.

With regard to claims 3-4, Deml et al teaches that the aperture mask is comprised of an elongated aperture, (please see Figure 6), but it does not teach explicitly that the object for recording the hologram is comprised of a sequence of steps in a moving image or movement is being recorded. **Buchkremer** et al in the same field of endeavor teaches a hologram recording method wherein sequential

image that include movement of object can be recorded, (please see column 2, lines 1-3). Buchkremer et al teaches that aperture mask with elongate opening or aperture, (please see Figure 3) wherein the aperture is extended parallel with the object is utilized so that movement effect of the object is recorded. It would then have been obvious to one skilled in the art to apply the teachings of Buchkremer et al to modify the aperture mask of Yamazaki to allow movement of the object be recorded to make the recorded hologram or interference pattern with more desired movement design. It is implicitly true that the desired design can be recorded in the sequence of movement of the image.

8. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Deml et al in view of the patent issued to Buchkremer et al (PN. 5,973,807).

The hologram and method for recording it as taught by Deml et al as described for claim 1 above has met all the limitations of the claims. ..

With regard to claim 11, Deml et al does not teach a plurality of objects with corresponding apertures. Buchkremer et al teaches that for each object scene an aperture is defined, to ensure the movement effect is recorded.

With regard to amended claim 12, Buchkremer et al also teaches that the recording of each movement scene can be utilized to record a *master* hologram H1, (please see Figure 8) and then the master hologram H1 is being used to record or *duplicate* hologram H2, by exposing the H1 hologram with conjugate reference beam (R1*) to reproduce the recorded the diffused object image and causes the reproduced object image to interfere with a reference beam (R2) in a recording medium (please see Figure 9). It would then have been obvious to one skilled in the art to apply the teachings of **Buchkremer** et al to modify the recording method of **Deml et al** for the benefit of using well known contact method namely recording a master hologram and use the mater hologram to duplicate the hologram as alternative method to mass producing the final hologram. Although these references do not teach explicitly that the H1 and

H2 holograms are Benton H1 and H2 holograms, such modification are considered to be obvious matters of design choice to one skilled in the art. Since the method for recording H1 and H2 holograms is the same for recording Benton H1 and H2 holograms and H1 and H2 holograms include Benton H1 and H2 holograms, such modification would only provide specific hologram being recorded as a matter of design choice to one skilled in the art.

9. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patents issued to Deml et al and Buchkremer et al as applied to claims 1 and 5 above, and further in view of the patent issued to Benton et al (PN. 5,121,229).

The hologram and method for recording the hologram as taught by **Deml** et al in combination with the teachings of **Buchkremer** et al as described for claims 1 and 5 above have met all the limitations of the claims.

Deml et al teaches that the aperture mask has an elongated openings or apertures but it does not teach if the bar shaped aperture is extended transverse to the object for creating color variation. **Benton** et al in the same field of endeavor teaches a method for recording hologram wherein aperture or slits with extension transverse to the object (pleas see Figure 4A) are provided to record *multi-color* hologram so that when reproduced by white light multi-color effect is observed, (please see column 4, lines 24-28). It would then have been obvious to one skilled in the art to apply the teachings of Benton et al to modify the apertures or openings to allow multi-color effect be recorded to make the hologram has full color.

With regard to claim 8, it would have been obvious to one skilled in the art to apply the teachings of Buchkremer et al and Benton et al to modify the apertures or openings to have the shape for allowing both movement effect and multi-color effect be recorded.

10. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Deml et al (PN. 3,891,975) in view of the patent issued to Gayeski (PN. 3,749,469).

The hologram and method for recording the hologram as taught by Deml et al as described for claim 1 above has met all the limitations of the claims.

Deml et al teaches that the aperture mask has an elongated opening or aperture but it does not teach explicitly that the apertures are of pinholes or non-rectilinear shape. But since the specification fails to teach the criticality of the particular shape of the aperture, such feature is considered to be obvious modification to one skilled in the art to achieve different light illumination. Gayeski in the same field of endeavor teaches to use a pinhole array with pinhole aperture plate for controlling the light illumination, (please see Figure 1). One skilled in the art would then have been motivated to apply the teachings of Gayeski to modify the aperture shape.

11. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Gayeski et al (PN. 3,749,469) in view of the patent issued to Yamazaki (PN. 5,535,023) .

The hologram and method for making the hologram as taught by Gayeski et al as described for claim 1 above has met all the limitations of the claims.

With regard to claims 13-15, Gayeski et al does not teach a security device that includes the hologram and an item such as banknote or certificate of authenticity includes the security device. **Yamazaki** in the same field of endeavor teaches a hologram can be recorded to include information that is applied to provide judge for genuine or a forgery, i.e. serves as the security device, (pleas see column 5, lines 2-8). The hologram can be recorded on any cards such as banknote or certificate of authority, (please see column 5, lines 7-8). It would then have been obvious to one skilled in the art to apply the teachings of Yamazaki to extend the application of the hologram of Gayeski et al as security device recorded on banknote etc.

12. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Deml et al (PN. 3,891,975) in view of the patent issued to Yamazaki (PN. 5,535,023) .

The hologram and method for making the hologram as taught by Deml et al as described for claim 1 above has met all the limitations of the claims.

With regard to claims 13-15, Deml et al does not teach a security device that includes the hologram and an item such as banknote or certificate of authenticity includes the security device. **Yamazaki** in the same field of endeavor teaches a hologram can be recorded to include information that is applied to provide judge for genuine or a forgery, i.e. serves as the security device, (pleas see column 5, lines 2-8). The hologram can be recorded on any cards such as banknote or certificate of authority, (please see column 5, lines 7-8). It would then have been obvious to one skilled in the art to apply the teachings of Yamazaki to extend the application of the hologram of Deml et al as security device recorded on banknote etc.

13. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Gayeski.

The hologram recording method taught by Gayeski as described for claim 16 above has met all the limitations of the claim.

With regard to claim 16, Gayeski does not teach explicitly that the object comprises a plurality of discrete objects. However since the hologram recording method is the **same** for either one single object or a plurality of objects, such modification is considered object matters of design choice to one skilled in the art for the benefit of recording more than one objects.

Response to Arguments

14. Applicant's arguments filed on July 8, 2009 have been fully considered but they are not persuasive. The newly amended and newly added claims have been fully considered and they are rejected for the reasons stated above.

15. In response to applicant's arguments which state that the cited Gayeski reference teaches that the light from each pinhole illuminate the entire object, so that the pinhole array cannot be an aperture mask such that different part so the object are imaged on to sensitive different non-overlapping parts of the recording medium, the examiner respectfully disagrees, Gayeski reference teaches that the hologram recording medium is also located at the image plane of the pinhole array, the image of each pinhole contains all the information for reconstructing the object, (please see column 5, lines 11-14), this manes that the image of the pinhole contain a hologram that that capable of reconstructing the object, this means that within each of the image of the pinhole, which also coincidence with the hologram recording medium, different parts of the object has to be imagined on to respective different non-overlapping parts of the recoding medium in order for the object be reconstructed from the region corresponding to each image of the pinhole. Even applicant demonstrates from the Figure provided in page 6 of the remark shown that the light of different parts of the object reaches different part of the hologram recording medium. It is also note that different parts of the object have to reach different, non-overlapping parts of the recording medium in order for the object to be reconstructed. If the different parts of the object reach same part of the recording medium then no complete and non-blurring object image can be reconstructed. So In order for the object image be reconstructed from the recorded hologram, the different parts of the object have to reach and recorded at different, non-overlapping parts of the hologram recording medium. Furthermore, applicant's analysis of the light rays behavior of the cited Gayeski reference does not seem to be correct. Since if apply the same light ray analysis, then NONE of the figures in the instant application will support the feature "different parts of the object are imagined on to the respective

different, non-overlapping parts of the recording medium" since the light would diverged from every point of the object and the diverged light rays from each of the object points will overlapped the same way or similarly to the demonstration shown by applicant in the figure of the remark. **The specification therefore seriously questionable to enable the claims.**

16. In response to applicant's arguments concerning the cited Deml reference, the applicant is respectfully noted that the rejection of the claims is based on the recording method disclosed in the specification and Figures 6 and 7 not on Figure 11. Figure 11 is only being mentioned to demonstrate how to generate coherent reference beam from the laser light source.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (9:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Audrey Y. Chang, Ph.D.

/Audrey Y. Chang/
Primary Examiner, Art Unit 2872

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